

CLAIMS

We claim:

1. A syringe safety device configured to form a fluid coupling between a sealed vial and a syringe, the syringe safety device comprising:

5 a tubular connector having opposing first and second open axial ends, the first open axial end being adapted to engage an end of a conventional medicine vial with stopper; and

10 a sliding joint received in the second open axial end of the tubular connector, the sliding joint having opposing first and second open axial ends and a passageway between the first and second open axial ends, the first open axial end being adapted to engage with an enlarged, blunt mounting end of a syringe needle, the second axial end of the sliding joint further being adapted to releasably engage at least a releasable needle receiver on a distal end of a barrel of a conventional syringe without needle, the syringe being releasably removable from the sliding joint after fluid coupling with the vial through the passageway of the sliding 15 joint without removal of the sliding joint from the tubular connector and without the needle.

2. The syringe safety device according to claim 1 further comprising a syringe needle with one pointed end and one enlarged, blunt removable mounting end, the needle being non-releasably captured in the tubular connector with the sliding joint.

3. The syringe safety device according to claim 2 wherein the first axial end of the 20 sliding joint is configured to releasably mate with the blunt mounting end of the enclosed needle .

4. The syringe safety device according to claim 3 wherein the first axial end of the sliding joint includes a needle receiver configured to releasably engage the blunt mounting end of the enclosed needle.

25 5. The syringe safety device according to claim 1 wherein the second axial end of the sliding joint is open and has an inner chamber exposed at the second end of the tubular connector, the inner chamber being configured to releasably receive at least a needle mount provided on the distal end of the syringe to removably mount a needle to the distal end of the syringe.

6. The syringe safety device according to claim 1 wherein the sliding joint has a needle receiver at the first axial end configured to engage with the enlarged blunt end of the needle and a needle receiver engaging structure at the second axial end configured to releasably receive the needle receiver of the syringe.

5 7. The syringe safety device of claim 6 wherein a Luer type needle receiver of the syringe is releasably matable with the needle receiver engaging structure at the second end of the sliding joint and a bell shaped mating member of the needle, the needle receiver at the first end of the sliding joint also being releasably matable with the bell shaped mating member of the needle, whereby the sliding joint can be releasably engaged between a releasable syringe
10 needle and a syringe directly releasably engageable with the syringe needle.

8. The syringe safety device according to claim 1 in combination with the sealed vial.

9. The combination in accordance with claim 8 wherein the syringe safety device and the vial are packaged together in sealed, sterile packaging.

15 10. The syringe safety device according to claim 1 in combination with the syringe without needle.

11. The combination according to claim 10 wherein the syringe safety device and the syringe are packaged together in sealed, sterile packaging.

20 12. The combination according to claim 11 further comprising the sealed vial packaged together with the syringe safety device and the syringe in the sealed, sterile packaging.

13. The syringe safety device according to claim 1 wherein the tubular connector has an open ended cavity at the first open axial end adapted to receive a flange end of a vial with stopper and wherein the tubular connector has at least one spring clip member extending
25 into the cavity and adapted to snap against a vial inserted into the first cavity after the flange end of the inserted vial has cammed under and past the at least one spring clip member.

14. The syringe safety device according to claim 13 wherein the at least one spring clip member is adapted to non-releasably engage the flange of a vial cammed under and past the at least one spring clip member.